

XLIX.—*Descriptions of Four new Cyprinoid Fishes from High Asia.* By Dr. ERICH ZUGMAYER, of the Zoological Museum, Munich.

IN a collection of fishes which I made during the year 1906 in Chinese Turkestan, Western Tibet, and Kashmir the following four species appear to be new to science. Of the genus *Aspiorhynchus* (Kessler) two of the known species were previously described under the name of *Ptychobarbus longiceps* and *Pt. laticeps* by Day. Kessler later on introduced the generic name of *Aspiorhynchus*, and added a third species, *A. przewalskii*. *Schizothorax tibetanus* is more allied to the species known from Kashmir than to those described from the Brahmaputra system; this is not surprising, since the Panggong lakes, where this new species was collected, must have belonged to the Indus system until not long ago. *Aspiorhynchus* is exclusively characteristic for the Tarim basin.

*Aspiorhynchus sartus*, sp. n.

D. III/6. P. I/18. V. I/8. A. III/5. L. lat. ca. 125.

Length of head contained  $3\frac{1}{2}$ , height of body 7 in total length. The height of the head exceeds its width a little and measures half its length. Eyes oval and oblique, the anterior margin being the higher; their greatest diameter is contained 11 in length of head, 3 in the preorbital, and 3 in the interorbital space, which latter is flat. Barbels two at the corners of the mouth, reaching beyond the vertical from the posterior margin of the eye. Mouth terminal, its cleft obliquely ascending. The maxilla reaches to below the front edge of the eye. An interrupted lower labial fold is present. Lower jaw somewhat the longer, with a moderate knob at the symphysis. Free portion of tail  $\frac{2}{3}$  as deep as it is long. Scales oval, arranged in oblique rows on the anterior part of the body. Fins: the distance from tip of snout to beginning of dorsal exceeds the distance from end of dorsal to root of caudal by one half. Osseous ray moderately strong, closely serrated behind, measuring  $\frac{1}{3}$  of the length of the head. Pectoral does not extend halfway to insertion of ventral and is about  $\frac{2}{3}$  the length of head. Base of the ventral under the first divided dorsal ray; the fin itself does not reach halfway to the anal. The length of the base of the anal is contained twice in its depth; when laid flat the anal misses the root of the caudal by the length of its base.

Colour greyish brown on upper half of body, lower parts silvery. No spots with the exception of a few at the base of the dorsal.

One specimen of 530 mm. was collected from the Kisil Su near Kashgar.

*Schizothorax tibetanus*, sp. n.

D. III/3. P. I/16-17. V. I/10. A. III/6.

L. lat. ca. 100 (97-102).

Length of head 4, depth of body  $4\frac{2}{3}$  in total length (without caudal). Height of head  $\frac{3}{8}$  of its length, its width  $\frac{3}{4}$  of its height. Eyes 7 in length of head, 2 from end of snout,  $2\frac{1}{2}$  apart. Barbels four, subequal, a little longer than the eye (ca. 5:4). Lower labial fold interrupted. Mouth antero-inferior, the upper jaw somewhat the longer and a little overhung by the snout. Margin of the lower jaw rounded and covered with a thinly striated horny layer. Lower part of thorax naked from the insertion of the pectorals to the isthmus. Free portion of tail half as high as it is long. Scales of the tiled row about half as long as the eye. Fins: the dorsal spine is inserted halfway between the hind edge of the eye and the root of the caudal; its osseous portion is as high as the head, moderately strong, rather compressed, and finely serrated. The pectoral reaches beyond halfway to the ventral; the latter begins under the dorsal spine and misses the vent by the diameter of the eye. Anal extending nearly to the root of the caudal, which is deeply forked.

Coloration brown, with a bluish hue, sides yellowish, lower parts silvery. Upper half of body and vertical fins closely dotted with blackish.

One specimen of 350 mm. and three smaller ones were caught in a little river running in the Tso Rum, Panggong Lakes, Tibet.

*Schizothorax ladacensis*, sp. n.

D. IV/8. P. I/19. V. I/9. A. III/5. C. 30. L. lat. ca. 100.

Length of head  $4\frac{1}{4}$ , depth of body  $4\frac{7}{10}$  in total length (without caudal). The width of the head equals its height and measures  $\frac{3}{4}$  of its length. Eyes 8 diameters in length of head, the postorbital portion being as long as the preorbital one, and 3 diameters apart. Interorbital space flattish. Barbels four, the anterior reaches the vertical from the hind margin of the eye; the posterior extends to hind edge of

preopercle. Caudal peduncle as long as high. Mouth inferior, upper jaw considerably overhung by the snout. Lips fleshy. Margin of the lower jaw rounded, with a striated horny covering. Lower labial fold continuous, dividing the lip in a median and two lateral lobes. Scales of the tiled row  $\frac{2}{3}$  to  $\frac{3}{4}$  the length of the eye. Fins: dorsal spine inserted halfway between the nostrils and the root of the caudal; its osseous portion is very strong, of the same height as the caudal peduncle, and strongly serrated to its extremity. The pectoral reaches considerably over halfway towards the ventral; the latter begins below the dorsal spine and extends  $\frac{3}{4}$  the distance to the anal opening. The anal fin reaches the caudal. Caudal deeply forked, the lower lobe being somewhat the longer.

Upper part of body brownish, with blackish marbling, forming indistinct cross-bands, which descend to the lateral line; lower parts silvery yellow; vertical fins feebly spotted with brown.

Two specimens, the bigger one measuring ca. 400 mm., were caught in the Indus near Leh.

*Schizothorax montanus*, sp. n.

D. III/9. P. I/16. V. I/9. A. II/6. L. lat. ca. 100.

Length of head  $3\frac{1}{2}$ , depth of body 6 in total length (without caudal). Height of head equal to its width, measuring  $\frac{1}{2}$  of its length. Eyes suboval, their longer diameter  $9\frac{1}{2}$  in length of head,  $3\frac{1}{2}$  in preorbital and 3 in interorbital space. Barbels four, the anterior reaching to the anterior nostril, the posterior to the vertical from the hind margin of the eye. Mouth terminal, with the jaws of equal length. Margin of the lower jaw rounded, its horny covering composed of oblique rows of closely set papillæ. Lower labial fold interrupted. Caudal peduncle  $1\frac{2}{3}$  as long as it is high. Scales of the tiled row about half the greater diameter of the eye. Fins: the dorsal spine is inserted halfway between the posterior margin of the eye and the root of the caudal; it is broken in the specimen in question, but appears to be of considerable length, moderately strong, and finely serrated. Pectoral extending two-thirds the distance from its base to that of ventral; this latter fin begins a little before the vertical from the dorsal spine and reaches  $\frac{2}{3}$  the distance to the base of the anal. The anal is more than twice as high as its base is long, but it does not quite extend to the caudal.

Caudal deeply forked, the longest rays being twice as long as the shortest.

Colour greenish brown above, sides and lower parts silvery. A few scattered dark spots on upper half of body.

One specimen (ca. 500 mm.) from the Indus near Leh.

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L.—*The Species of Three-spined Sticklebacks*  
(*Gastosteus*). By C. TATE REGAN, M.A.

I HAVE recently made a study of the Three-spined Sticklebacks (*Gastosteus*) in the British Museum, with a view to determining the number of species which may be recognized. After examination of a large number of specimens, representing all the nominal species which have been described, I have arrived at the conclusion that the greater part of the area of the genus is occupied by a single species, *G. aculeatus*, which is very variable. In the northern part of its range in the sea the dermal ossification is strong, the series of bony plates complete, the caudal keel prominent, the ectocoracoids long and the naked areas above them consequently large, the pelvic plate long, lanceolate, without an anterior notch, and the fin-spines usually either long or strong. Towards the southern part of its range in the sea, or in fresh water, the dermal ossification is weaker; if the bony plates form a complete series they are not so deep nor usually so numerous as in northern marine examples, and the caudal keel is less prominent; the series of plates may be incomplete, the first to disappear being the ones preceding the caudal keel, the most persistent being the three (5th to 7th) which are usually in contact with the ascending process of the pelvis; sometimes the plates are entirely absent. The pelvic plate becomes shorter and may develop an anterior notch, becoming heart-shaped, arrow-shaped, or even V-shaped; also the naked area in front of the pectoral fin may become smaller, the spines shorter or weaker, and the fin-rays more or less reduced in number.

I am unable to detect any difference between specimens from the Atlantic and Pacific: for example, fully-mailed specimens from Puget Sound appear to me to be in every way identical with some from the Shetlands; similarly, specimens from the Santa Clara River, California, agree closely with others from various inland localities in the British Isles, from Northern Italy, and from Japan.